

SYSTEMS AND METHODS FOR PROVIDING A SUBSIDY OFFER THROUGH A CUSTOMER DEVICE

5 CROSS-REFERENCES TO RELATED APPLICATIONS

The present application: claims the benefit of provisional U.S. Patent Application Serial No. 60/143,490 filed July 12, 1999; and is a continuation-in-part of U.S. Patent Application Serial No. 09/219,267 entitled "Method and Apparatus for Facilitating
10 Electronic Commerce Through Providing Cross-Benefits During a Transaction" and filed December 23, 1998.

The present application is related to: U.S. Patent Application Serial No. 09/282,747 entitled "Method and Apparatus for Providing Cross-Benefits Based on a Customer Activity" and filed March 31, 1999; U.S. Patent Application Serial No. 09/274,281
15 entitled "Method and Apparatus for Providing Cross-Benefits via a Central Authority" and filed March 22, 1999; U.S. Patent Application Serial No. 09/322,351 entitled "Method and Apparatus for Providing Cross Benefits and Penalties" and filed May 28, 1999; U.S. Patent Application Serial No. 09/100,684 entitled "Billing Statement Customer Acquisition System" and filed May 19, 1999, which is a continuation-in-part of U.S.
20 Patent Application Serial No. 08/982,149 entitled "Method and Apparatus for Printing a Billing Statement to Provide Supplementary Product Sales" and filed on December 1, 1997; U.S. Patent Application Serial No. 08/943,483 entitled "System and Method for Facilitating Acceptance of Conditional Purchase Offers (CPOs)" and filed on October 3, 1997, which is a continuation-in-part of U.S. Patent Application Serial No. 08/923,683
25 entitled "Conditional Purchase Offer (CPO) Management System For Packages" and filed September 4, 1997, which is a continuation-in-part of U.S. Patent Application Serial No. 08/889,319 entitled "Conditional Purchase Offer Management System" and filed July 8, 1997, which is a continuation-in-part of U.S. Patent Application Serial No. 08/707,660 entitled "Method and Apparatus for a Cryptographically Assisted Commercial Network
30 System Designed to Facilitate Buyer-Driven Conditional Purchase Offers" filed on September 4, 1996 and issued as U.S. Patent No. 5,794,207 on August 11, 1998; U.S. Patent Application Serial No. 08/994,426 entitled "Method and Apparatus for Providing Supplementary Product Sales to a Customer at a Customer Terminal" filed on December

19, 1997, which is a continuation-in-part of U.S. Patent Application Serial No. 08/920,116
entitled "Method and System for Processing Supplementary Product Sales at a Point-of-
Sale Terminal" and filed on August 26, 1997; and U.S. Patent Application Serial No.
09/221,099 entitled "Pre-Sale Data Broadcast System and Method" and filed December
5 28, 1998. The entire contents of these application are incorporated by reference.

FIELD

The present invention relates to transactions in which a customer purchases an
10 item. In particular, the present invention relates to systems and methods wherein a
subsidy offer is provided to a customer through a customer device.

BACKGROUND

15 Electronic commerce is becoming more accepted as a growing number of
customers shop online (*e.g.*, via the World Wide Web). However, electronic commerce
suffers from many of the same problems that are associated with conventional commerce.
For example, there is significant competition among merchants to attract and retain
customers, and, as a result, merchants are not able to increase profits by increasing prices.
20 Price competition is even stronger on the Internet, where customers can more readily
"shop around" to determine prices offered by different merchants.

Even when a customer has decided to utilize a particular merchant, he or she will
not make a purchase if an item price is greater than the customer is willing (or able) to
pay. One way to encourage the customer to purchase the item, via the World Wide Web
25 or otherwise, is to reduce the item price. Unfortunately, reducing the item price also
reduces the merchant's profit, and the reduced profit may not be offset by an increase in
sales.

Instead of directly reducing the item price, it is known that a merchant can offer a
promotion to encourage the customer to purchase the item. For example, a merchant may
30 advertise a "buy one get one free" promotion. Similarly, a merchant may advertise that
customers can receive a discount by establishing a credit card account associated with the
merchant.

It is also known that a number of merchants can work together to offer a
promotion. For example, a first merchant may advertise that if a customer purchases a

first item from the first merchant, a second item can be purchased at a reduced price from, or be given away by, a second merchant.

It is also known for a promotion to be generally provided at a point of sale. For example, a merchant's Web site may display a "banner advertisement" that allows a customer to access another Web site to make a second purchase.

All of the above techniques, however, have serious disadvantages. For example, merchant promotions are offered to potential customers before the customer indicates that he or she is interested in a particular item (*e.g.*, by advertising the promotion on a radio station). As a result, the merchant must pay to have information about the promotion distributed to many people who may not be interested in the promotion. Moreover, the merchant will not be able to use information about a particular transaction (*e.g.*, demographic information about the customer purchasing the item or information about the item) to select or modify the promotion as appropriate.

U.S. Patent Application Serial No. 09/219,267, the parent of the present continuation-in-part application, discloses a system wherein a merchant server of a first merchant receives an indication of items that a customer is to purchase via a Web site. The indication may be, for example, a signal indicating that the customer is ready to "check out" his or her virtual shopping cart of items on the Web site. In response, the merchant server provides an offer for a benefit from a second merchant, which may be referred to as one type of cross-benefit or subsidy offer. If the customer indicates acceptance of the offer, the benefit is applied to the item or items being purchased. For example, the total price paid for the items may be reduced, or the items may be provided to the customer for free. In exchange, the customer agrees to participate in a transaction with the second merchant. For example, the customer may agree to switch service providers (*e.g.*, to switch long distance telephone service providers) or to initiate a new service agreement (*e.g.*, to apply for a new credit card) via the second merchant.

A need exists, however, for further systems and methods to facilitate commerce, such as for systems and methods wherein a subsidy offer is provided through a customer device.

SUMMARY OF THE INVENTION

To alleviate problems inherent in the prior art, the present invention introduces
5 systems and methods wherein a subsidy offer is provided through a customer device.

In one embodiment of the present invention, a subsidy offer to be provided to a
customer is determined, the subsidy offer being associated with a benefit from a subsidy
provider. Information associated with the subsidy offer is transmitted to be stored on a
customer device associated with the customer, and the customer device outputs the
10 subsidy offer to the customer when the customer indicates an interest in purchasing an
item.

Another embodiment of the present invention comprises: means for determining a
subsidy offer to be provided to a customer, the subsidy offer being associated with a
benefit from a subsidy provider; and means for transmitting information associated with
15 the subsidy offer to be stored on a customer device associated with the customer, wherein
the customer device outputs the subsidy offer to the customer when the customer indicates
an interest in purchasing an item.

With these and other advantages and features of the invention that will become
hereinafter apparent, the nature of the invention may be more clearly understood by
20 reference to the following detailed description of the invention, the appended claims and
the several drawings attached herein.

BRIEF DESCRIPTION OF THE DRAWINGS

25 FIG. 1A is a block diagram overview of a transaction system according to an
embodiment of the present invention.

FIG. 1B is a block diagram overview of a transaction system according to another
embodiment of the present invention.

30 FIG. 2 is a block schematic diagram of a subsidy provider device according to an
embodiment of the present invention.

FIG. 3 is a block schematic diagram of a central controller according to an
embodiment of the present invention.

FIG. 4 is a block schematic diagram of a customer device according to an
embodiment of the present invention.

FIG. 5 is a block schematic diagram of a merchant device according to an embodiment of the present invention.

FIG. 6 is a tabular representation of a portion of a subsidy provider database according to an embodiment of the present invention.

5 FIG. 7 is a tabular representation of a portion of a subsidy provider rules database according to an embodiment of the present invention.

FIG. 8 is a tabular representation of a portion of a central subsidy database according to an embodiment of the present invention.

10 FIG. 9 is a tabular representation of a portion of a central subsidy rules database according to an embodiment of the present invention.

FIG. 10 is a tabular representation of a portion of a central issued subsidy offer database according to an embodiment of the present invention.

FIG. 11 is a tabular representation of a portion of a customer subsidy offer database according to an embodiment of the present invention.

15 FIG. 12 is a tabular representation of a portion of a customer subsidy offer rules database according to an embodiment of the present invention.

FIG. 13 is a tabular representation of a portion of a redeemed subsidy offer database according to an embodiment of the present invention.

20 FIG. 14 is a flow chart illustrating a subsidy provider device or central controller method according to an embodiment of the present invention.

FIG. 15 is a flow chart illustrating a customer device method according to an embodiment of the present invention.

FIG. 16 is a flow chart illustrating a merchant device method according to an embodiment of the present invention.

25 FIG. 17 is a flow chart illustrating a subsidy provider device method according to an embodiment of the present invention.

FIG. 18 is a flow chart illustrating a central controller method according to an embodiment of the present invention.

30 FIG. 19 is a flow chart illustrating a customer device method according to an embodiment of the present invention.

FIG. 20 is a flow chart illustrating a merchant device method according to an embodiment of the present invention.

FIG. 21 illustrates a customer personal digital assistant displaying information according to an embodiment of the present invention.

DETAILED DESCRIPTION

The present invention is directed to systems and methods for evaluating information associated with a transaction to determine a subsidy offer. Referring in detail to the drawings, FIG. 1A is a block diagram overview of a transaction system 100 according to one embodiment of the present invention. The transaction system 100 includes a subsidy provider device 200 in communication with a central controller 300. As used herein, devices (such as the subsidy provider device 200 and the central controller 300) may communicate, for example, through a communication network, such as a Local Area Network (LAN), a Wide Area Network (WAN), a Public Switched Telephone Network (PSTN), or an Internet Protocol (IP) network such as the Internet, an intranet or an extranet. Moreover, as used herein, communications include those enabled by wired and/or wireless technology. Note that although a single subsidy provider device 200 is shown in FIG. 1A, any number of subsidy provider devices 200 may be included in the transaction system 100. Similarly, any number of the other devices described herein may be included according to embodiments of the present invention.

The central controller 300 is also in communication with a customer device 400 and a merchant device 500. Note that the customer device 400 may not be in constant communication with the central controller 300 or the merchant device 500. For example, the customer device 400 may only communicate (i) with the central controller 300 via the Internet when attached to a “docking” station or “cradle” or otherwise in communication with another device such as a Personal Computer (PC) and (ii) with the merchant device 500 via an Infra Red (IR) port when near a merchant Point Of Sale (POS) terminal.

In one embodiment of the present invention, the customer device 400 communicates with a remote, Web-based central controller 300 (*e.g.*, a Web server) via the Internet. Although embodiments of the present invention are described with respect to information exchanged using a Web site, according to other embodiments of the present invention information can instead be exchanged using, for example: a telephone, an Interactive Voice Response Unit (IVRU), a facsimile machine, postal mail, electronic mail, a WEBTV® interface, a cable network interface, or a wireless communication system.

In general, the central controller 300 can be any device capable of performing methods in accordance with the present invention. Note that any of the subsidy provider

device 200, the central controller 300 and the merchant device 500 may be incorporated in a single device (*e.g.*, a kiosk located in the merchant's store may serve as both a central controller 300 and a merchant device 500).

The customer device 400 may be, for example: a PC, a portable computing device such as a Personal Digital Assistant (PDA), a wired or wireless telephone, a one-way or two-way pager, a kiosk, an Automated Teller Machine (ATM) device, a watch enabled to communicate through a network, a smart card, a magnetic stripe card, or any other appropriate communication or storage device.

The merchant device 500 may be, for example: (i) a Web server or (ii) a POS terminal or a device located at, or communication with, a POS terminal. According to another embodiment of the present invention, the merchant device 500 may instead be an ATM device.

As will be explained, the transaction system 100 may be used to process a transaction in which a customer purchases an item. As used herein, an "item" refers to anything that may be purchased by a customer (*e.g.*, a good or a service). Airline tickets, consumer electronics and grocery items are some examples of items that may be purchased by a customer.

According to an embodiment of the present invention, the subsidy provider device 200 sends information about one or more subsidy offers to the central controller 300. As used herein, a "subsidy offer" refers to any offer associated with a benefit from a subsidy provider, the benefit to be applied to a transaction. For example, a subsidy provider may offer to apply \$50 towards the purchase of an item. In general, the benefit can be anything of value to the customer (*e.g.*, a reduced price for an item to be purchased, an additional item, a higher quality item, an extended warranty or a lower interest rate). The central controller 300 stores information about the subsidy offer along with information about other subsidy offers (*e.g.*, subsidy offers from other subsidy providers). Note that, according to another embodiment, the subsidy provider device 200 may instead send information about one or more subsidy offers to a customer device 400.

The central controller 300 determines one or more subsidy offers that will be provided to a customer, such as by selecting a set of subsidy offers based on information associated with the customer (*e.g.*, demographic information). In one embodiment, the customer may request that subsidy offers be provided to his or her customer device 400. The customer may also be able to specify characteristics of the subsidy offers to be provided to him or her. For example, the customer may request subsidy offers associated

with a particular retail store, item, task or benefit. The central controller 300 transmits information associated with the determined set of subsidy offers to the customer device 400, which then stores this information.

The customer device 400 then outputs one or more of the stored subsidy offers to the customer when the customer indicates an interest in purchasing an item. For example, when the customer uses his or her customer device 400 (*e.g.*, his or her PDA) to request information associated with an item (*e.g.*, a price associated with the item), the customer device 400 may display a description of a subsidy offer (*e.g.*, “receive \$40 off the price of this camera if you agree to purchase one roll of KODAK film each month for the next two years”). Note that according to an embodiment of the present invention, the customer device 400 outputs a subsidy offer according to a customer rule (*e.g.*, the offer is output only if the customer is interested in purchasing a camera). In accordance with an embodiment of the present invention, subsidy offers may also be output based upon other conditions, some of which are described with respect to FIG. 12.

According to an embodiment of the present invention, the customer device 400 outputs a redemption code following acceptance of a subsidy offer by the customer. The redemption code may be used, for example, by the merchant device 500 to apply the benefit to the transaction (*e.g.*, to reduce an original price associated with a camera by \$40). According to one embodiment, the redemption code is output visually, thereby informing the customer of the redemption code. The redemption code may also be output via an IR signal, or any other signal, to another device.

The subsidy offer may be conditioned on the performance of a task by the customer. For example, the subsidy provider may offer to apply \$100 towards the purchase of an airline ticket only if the customer agrees to apply for a new credit card. In this case, a penalty may be applied if a customer who accepts the subsidy offer does not sufficiently perform the task. For example, a payment identifier (*e.g.*, a debit account number, a checking account number, or a digital payment protocol identifier) associated with a particular customer device 400 may be received and stored by the central controller 300 upon acceptance of the offer by the customer. For example, if a customer subsequently fails to apply for a new credit card as he or she agreed when accepting a subsidy offer, a penalty amount less than, equal to or more than a subsidy amount may be applied (*e.g.*, applied using a stored payment identifier associated with the customer).

Note that the customer device 400 may communicate directly with the subsidy provider device 200 (as shown by a dashed line in FIG. 1A). For example, the subsidy

provider may offer to pay for the customer's purchase of a book if the customer applies for a new credit card. In this case, the credit card application information (e.g., the customer's name, address and Social Security number) may be transmitted directly from the customer device 400 to the subsidy provider device 200. Similarly, information about available
5 subsidy offers may be transmitted directly from the subsidy provider device 200 to the customer device 400.

The merchant device may arrange for the customer to receive a benefit based on information received from, for example, the customer or customer device 400 (e.g., based on a redemption code received from the customer device 400). The merchant device may
10 also verify the information (e.g., the redemption code) based on information received from, for example, the subsidy provider device 200 or the central controller 300 (e.g., by comparing a redemption code received from a customer with a list of valid redemption codes or by sending each redemption code to the central controller 300 for verification).

FIG. 1B is a block diagram overview of a transaction system 150 according to
15 another embodiment of the present invention. As shown in FIG. 1B, the subsidy provider device 200 communicates with the central controller 300. The central controller 300 communicates with a customer PDA 460 through a customer PC 450 (e.g., via a docking station in communication with the customer PC 450). The merchant device 500 (e.g., a POS terminal or an ATM device) communicates with both the central controller 300 and
20 the customer PDA 460. A payment processing device 600 (e.g., a credit card system device) may also communicate with the merchant device 500 and/or the subsidy provider device 200. The payment processing device 600 may be used, for example, to determine information about a customer (e.g., a credit rating) or to arrange for the customer to receive a benefit (e.g., to have a subsidy amount credited to a credit card account).

25 Examples of devices that may be used in connection with the transaction systems 100, 150 will now be described in detail with respect to FIGS. 2 through 5.

Subsidy Provider Device

30 FIG. 2 illustrates a subsidy provider device 200 that is descriptive of the device shown in FIGS. 1A and 1B. According to an embodiment of the present invention, the subsidy provider device 200 comprises a processor 210, such as one or more INTEL® Pentium® processors, coupled to a communication device 220 configured to communicate through a communication network (not shown in FIG. 2). The communication device 220

may be used to communicate, for example, with: a central controller 300, one or more customer devices 400, and/or one or more merchant devices 500.

The processor 210 is also in communication with a storage device 230. The storage device 230 may comprise any appropriate information storage device, including combinations of magnetic storage devices (e.g., magnetic tape and hard disk drives), optical storage devices and semiconductor memory devices, such as Random Access Memory (RAM) devices and Read Only Memory (ROM) devices.

The storage device 230 stores a program 215 for controlling the processor 210. The processor 210 performs instructions of the program 215, and thereby operates in accordance with the present invention. For example, the processor 210 may determine a subsidy offer to be provided to a customer, the subsidy offer being associated with a benefit from a subsidy provider. The processor 210 may also transmit information associated with the subsidy offer to a central controller 300, which in turn may transmit the information to a customer device 400.

The program 215 may be stored in a compressed, uncompiled or encrypted format. The program 215 may furthermore include program elements that may be necessary, such as an operating system, a database management system and “device drivers” used by the processor 210 to interface with peripheral devices. Appropriate program elements are known to those skilled in the art and are not described in detail herein.

Note that the processor 210 and the storage device 230 may be, for example: (i) located entirely within a single computer or other computing device or (ii) located in separate devices coupled through a communication channel. In one embodiment, the subsidy provider device 200 comprises one or more computers that are connected to a remote database server.

As used herein, information may be “received” by, for example: (i) the subsidy provider device 200 from any other device or (ii) a software application or module within the subsidy provider device 200 from another software application, module or any other source.

As shown in FIG. 2, the storage device 230 also stores: a subsidy provider database 600 (described with respect to FIG. 6) and a subsidy provider rules database 700 (described with respect to FIG. 7).

Central Controller

FIG. 3 illustrates a central controller 300 that is descriptive of the device shown in FIGS. 1A and 1B. According to an embodiment of the present invention, the central controller 300 comprises a processor 310, such as one or more INTEL® Pentium® processors, coupled to a communication device 320 configured to communicate through a communication network (not shown in FIG. 3). The communication device 320 may be used to communicate, for example, with: a subsidy provider device 200, one or more customer devices 400, and/or one or more merchant devices 500. The central controller 300 may communicate using, for example, an IR transmitter, a memory unit, a communication bus coupled to a PDA cradle, a Universal Serial Bus (USB) port, a modem, and/or any other type of communication interface.

The processor 310 is also in communication with a storage device 330. The storage device 330 may comprise any appropriate information storage device, including combinations of magnetic storage devices (*e.g.*, magnetic tape and hard disk drives), optical storage devices and semiconductor memory devices, such as RAM devices and ROM devices.

The storage device 330 stores a program 315 for controlling the processor 310. The processor 310 performs instructions of the program 315, and thereby operates in accordance with the present invention. For example, the processor 310 may determine a subsidy offer to be provided to a customer, the subsidy offer being associated with a benefit from a subsidy provider. The processor 310 may also transmit information associated with the subsidy offer to a customer device 400 associated with the customer.

The program 315 may be stored in a compressed, uncompiled or encrypted format. The program 315 may furthermore include program elements that may be necessary, such as an operating system, a database management system and “device drivers” used by the processor 310 to interface with peripheral devices. Appropriate program elements are known to those skilled in the art and are not described in detail herein.

Note that the processor 310 and the storage device 330 may be, for example: (i) located entirely within a single computer or other computing device or (ii) located in separate devices coupled through a communication channel. In one embodiment, the central controller 300 comprises one or more computers that are connected to a remote database server.

As used herein, information may be “received” by, for example: (i) the central controller 300 from any other device or (ii) a software application or module within the central controller 300 from another software application, module or any other source.

As shown in FIG. 3, the storage device 330 also stores: a central subsidy database 800 (described with respect to FIG. 8), a central subsidy rules database 900 (described with respect to FIG. 9), and a central issued subsidy offer database 1000 (described with respect to FIG. 10).

Customer Device

FIG. 4 illustrates a customer device 400 that is descriptive of the device shown in FIG. 1A. According to an embodiment of the present invention, the customer device 400 comprises a processor 410, such as one or more INTEL® Pentium® processors, coupled to a communication device 420 configured to communicate through a communication network (not shown in FIG. 4). The communication device 420 may be used to communicate, for example, with: one or more subsidy provider devices 200, a central controller 300, and/or one or more merchant devices 500. The customer device 400 may communicate using, for example, an IR transmitter, a memory unit, a communication bus coupled to a PDA cradle, a USB port, a modem, and/or any other type of communication interface.

The processor 410 is also in communication with a storage device 430. The storage device 430 may comprise any appropriate information storage device, including combinations of magnetic storage devices (*e.g.*, magnetic tape and hard disk drives), optical storage devices and semiconductor memory devices, such as RAM devices and ROM devices.

The storage device 430 stores a program 415 for controlling the processor 410. The processor 410 performs instructions of the program 415, and thereby operates in accordance with the present invention. For example, the processor 410 may receive information associated with a subsidy offer. The processor 410 may also receive an indication that a customer is interested in purchasing an item and output the subsidy offer to the customer in response to the indication.

The program 415 may be stored in a compressed, uncompiled or encrypted format. The program 415 may furthermore include program elements that may be necessary, such as an operating system, a database management system and “device drivers” used by the

processor 410 to interface with peripheral devices. Appropriate program elements are known to those skilled in the art and are not described in detail herein.

Note that the processor 410 and the storage device 430 may be, for example: (i) located entirely within a single computer or other computing device or (ii) located in separate devices coupled through a communication channel.

As used herein, information may be “received” by, for example: (i) the customer device 400 from any other device or (ii) a software application or module within the customer device 400 from another software application, module or any other source.

As shown in FIG. 4, the storage device 430 also stores: a customer subsidy offer database 1100 (described with respect to FIG. 11) and a customer subsidy offer rules database 1200 (described with respect to FIG. 12). Some or all of the information stored in the storage device 430 may be stored as a “cookie” file. A cookie file may be a block of data that a Web server (*e.g.*, the central controller 300) stores on a client system (*e.g.*, the customer device 400). When a customer returns to the same Web site or an associated Web site, the browser of the customer device 400 sends a copy of the cookie file back to the Web server. Cookie files may be used to identify customers associated with the customer device 400, to instruct the Web server to send a customized version of a Web page, to submit account information for the customer, and for other purposes known to those of ordinary skill in the art.

Merchant Device

FIG. 5 illustrates a merchant device 500 that is descriptive of the device shown in FIGS. 1A and 1B. According to an embodiment of the present invention, the merchant device 500 comprises a processor 510, such as one or more INTEL® Pentium® processors, coupled to a communication device 520 configured to communicate through a communication network (not shown in FIG. 5). The communication device 520 may be used to communicate, for example, with: one or more subsidy provider devices 200, a central controller 300, and/or one or more customer devices 400. The merchant device 500 may communicate using, for example, an IR transmitter, a memory unit, a communication bus coupled to a PDA cradle, a USB port, a modem, and/or any other type of communication interface. Note that according to some embodiments of the present invention, the merchant device 500 may comprise, or be associated with, a POS terminal or an ATM device.

The processor 510 is also in communication with a storage device 530. The storage device 530 may comprise any appropriate information storage device, including combinations of magnetic storage devices (*e.g.*, magnetic tape and hard disk drives), optical storage devices and semiconductor memory devices, such as RAM devices and ROM devices.

The storage device 530 stores a program 515 for controlling the processor 510. The processor 510 performs instructions of the program 515, and thereby operates in accordance with the present invention. For example, the processor 510 may receive a redemption code from a customer and arrange for the customer to receive a benefit associated with a subsidy offer.

The program 515 may be stored in a compressed, uncompiled or encrypted format. The program 515 may furthermore include program elements that may be necessary, such as an operating system, a database management system and "device drivers" used by the processor 510 to interface with peripheral devices. Appropriate program elements are known to those skilled in the art and are not described in detail herein.

Note that the processor 510 and the storage device 530 may be, for example: (i) located entirely within a single computer or other computing device or (ii) located in separate devices coupled through a communication channel. In one embodiment, the merchant device 500 comprises one or more computers that are connected to a remote database server.

As used herein, information may be "received" by, for example: (i) the merchant device 500 from any other device or (ii) a software application or module within the merchant device 500 from another software application, module or any other source.

As shown in FIG. 5, the storage device 530 also stores a redeemed subsidy offer database 1300 (described with respect to FIG. 13).

Examples of databases that may be used in connection with the transaction systems 100, 150 will now be described in detail with respect to FIGS. 6 through 13. Each figure depicts a database in which the data is organized according to a data structure in accordance with embodiments of the present invention. The data may be stored, for example, on a computer readable medium and be accessible by a program executed on a data processing system. The schematic illustration and accompanying description of these databases are exemplary, and any number of other database arrangements could be employed besides those suggested by the figures.

Subsidy Provider Database

Referring to FIG. 6, a table represents one embodiment of the subsidy provider database 600 that may be stored at the subsidy provider device 200 according to an embodiment of the present invention. The table includes entries identifying subsidies that may be offered to a customer. The table also defines fields 602, 604, 606, 608, 610, 612 for each of the entries. The fields specify: a subsidy identifier 602, a description 604, a task 606, a benefit 608, an expiration date 610, and a redemption code format 612. The information in the subsidy provider database 600 may be created and updated, for example, when a subsidy provider decides that a new or modified subsidy is to be made available to customers.

The subsidy identifier 602 may be, for example, an alphanumeric code associated with a subsidy that may be offered to a customer. The subsidy identifier 602 may also be based on, or associated with, a subsidy identifier 702 stored in the subsidy provider rules database 700, a subsidy identifier 804 stored in the central subsidy database 800, and a subsidy identifier 902 stored in the central subsidy rules database 900.

For each subsidy, the subsidy provider database 600 may also store a description 604 of the subsidy. The description 604 may comprise, for example, any text, image or audio information associated with the subsidy. Each subsidy may also be associated with the task 606 that a customer must perform in accordance with the subsidy offer and the benefit 608 that will be provided to a customer in exchange for performing the task 606. The expiration date 610 indicates a date after which the subsidy is no longer available (e.g., may no longer be offered, accepted or redeemed), and the redemption code format 612 indicates a format of any redemption code associated with the subsidy. In one embodiment, each redemption code is unique. In this case, when a particular redemption code is received that redemption code is no longer valid. Thus, no more than one subsidy is provided for a particular redemption code.

For example, as illustrated by the first entry of FIG. 6, a subsidy having the subsidy identifier 602 of "S1001" is described as "earn \$50 credit towards your purchase if you apply for a CAPITAL ONE® credit card right now!" In order for the customer to receive the benefit 608 (i.e., \$50.00), the customer must fill out a CAPITAL ONE® credit card application as indicated by the task 606. The subsidy will only be offered to a customer before December 31, 2002 as indicated by the expiration date 610. The

redemption code associated with the subsidy has a format of “1001 + <customer identifier>” as specified by the redemption code format 612.

Thus, FIG. 6 depicts a database in which the data is organized according to a data structure according to an embodiment of the present invention. The data structure includes a subsidy offer description data object (*i.e.*, description 604) representing a description of a subsidy offer associated with: a subsidy task data object (*i.e.*, task 606) representing a subsidy task to be performed by a customer; a subsidy benefit data object (*i.e.*, benefit 608) representing a subsidy benefit, such as a monetary amount, to be provided to a customer; and a subsidy offer expiration date data object (*i.e.*, expiration date 610) representing a date after which the subsidy offer will not be provided to a customer.

Subsidy Provider Rules Database

Referring to FIG. 7, a table represents one embodiment of the subsidy provider rules database 700 that may be stored at the subsidy provider device 200 according to an embodiment of the present invention. The table includes entries identifying subsidies that may be offered to a customer. The table also defines fields 702, 704, 706, 708 for each of the entries. The fields specify: a subsidy identifier 702, an evaluation criteria 704, a total provider quantity 706, and a currently available provider quantity 708. The information in the subsidy provider rules database 700 may be created and updated, for example, when a subsidy provider decides that a new or modified subsidy is to be made available to customers.

The subsidy identifier 702 may be, for example, an alphanumeric code associated with a subsidy that may be offered to a customer. The subsidy identifier 702 may also be based on, or associated with, a subsidy identifier 602 stored in the subsidy provider database 600, a subsidy identifier 804 stored in the central subsidy database 800, and a subsidy identifier 902 stored in the central subsidy rules database 900.

For each subsidy, the subsidy provider rules database 700 also stores evaluation criteria 704 which indicate one or more conditions that must be met in order for the subsidy to be offered to a customer. The total provider quantity 706 and the currently available provider quantity 708 may indicate, for example, a total number of subsidies that the subsidy provider will allow customers to accept and the number of subsidies that the

subsidy provider has not yet made available to the central controller 300 or to customer devices 400.

For example, as illustrated by the first entry of FIG. 7, a subsidy having the subsidy identifier 702 of "S1001" will only be provided to customers who are not currently a CAPITAL ONE® cardholder. Moreover, the subsidy provider (*e.g.*, CAPITAL ONE®) has decided that a total of one thousand subsidies will be provided to customers (*e.g.*, subsidy offers will be provided to customers until one thousand customers accept the offers). The subsidy provider currently has two hundred accepted or outstanding offers (*e.g.*, offers that have been made available to the central controller 300), and therefore eight hundred subsidies are currently available (one thousand total offers - two hundred accepted or outstanding offers) as shown by the currently available provider quantity 708.

Central Subsidy Database

Referring to FIG. 8, a table represents one embodiment of the central subsidy database 800 that may be stored at the central controller 300 according to an embodiment of the present invention. The table includes entries identifying subsidies that may be offered to a customer. The table also defines fields 802, 804, 806, 808, 810, 812, 814 for each of the entries. The fields specify: a subsidy provider identifier 802, a subsidy identifier 804, a description 806, a task 808, a benefit 810, an expiration date 812, and a redemption code format 814. The information in the central subsidy database 800 may be created and updated, for example, based on (*i.e.*, based at least in part on) information received from one or more subsidy provider devices 200.

The subsidy provider identifier 802 may be, for example, an alphanumeric code associated with a subsidy provider. Note that the central subsidy database 800 may store information associated with a number of different subsidy providers and a number of different subsidies associated with each subsidy provider.

The subsidy identifier 804 may be, for example, an alphanumeric code associated with a subsidy that may be offered to a customer. The subsidy identifier 802 may also be based on, or associated with, a subsidy identifier 602 stored in the subsidy provider database, a subsidy identifier 702 stored in the subsidy provider rules database 700, and/or a subsidy identifier 902 stored in the central subsidy rules database 900.

For each subsidy, the central subsidy database 800 also stores a description 806 of the subsidy. The description 806 may comprise, for example, any text, image or audio information associated with the subsidy. Each subsidy may also be associated with the task 808 that the customer must perform in accordance with the subsidy offer and the benefit 810 that will be provided to a customer who accepts the subsidy offer. The expiration date 812 indicates a date after which the subsidy is no longer available, and the redemption code format 814 indicates a format of any redemption code associated with the subsidy. According to one embodiment, the redemption code format 814 may indicate that the redemption code is in the form of a sixteen-digit number. For example, a “pseudo” credit card number (*e.g.*, a number that may be transmitted through a credit card information network) may be used as a redemption code. According to one embodiment, this pseudo credit card number is associated with an actual credit card account (*e.g.*, is linked to an actual credit card account via a database entry) or to a temporary credit card account.

Note that the description 806, the task 808, the benefit 810, the expiration date 812 and the redemption code format 814 may be based on, for example, the description 604, the task 606, the benefit 608, the expiration date 610 and/or the redemption code format 612 stored in the subsidy provider database 600 (*e.g.*, may be based on information received from the subsidy provider device 200).

Thus, FIG. 8 depicts a database in which the data is organized according to a data structure according to an embodiment of the present invention. The data structure includes a subsidy offer description data object (*i.e.*, description 806) representing a description of a subsidy offer associated with: a subsidy task data object (*i.e.*, task 808) representing a subsidy task to be performed by a customer; a subsidy benefit data object (*i.e.*, benefit 810) representing a subsidy benefit, such as a monetary amount, to be provided to a customer; and a subsidy offer expiration date data object (*i.e.*, expiration date 812) representing a date after which the subsidy offer will not be provided to a customer.

Central Subsidy Rules Database

Referring to FIG. 9, a table represents one embodiment of the central subsidy rules database 900 that may be stored at the central controller 300 according to an embodiment of the present invention. The table includes entries identifying subsidies that may be

offered to a customer. The table also defines fields 902, 904, 906, 908 for each of the entries. The fields specify: a subsidy identifier 902, an evaluation criteria 904, a total central quantity 906, and a currently available central quantity 908. The information in the central subsidy rules database 900 may be created and updated, for example, based at least in part on information received from one or more subsidy provider devices 200.

The subsidy identifier 902 may be, for example, an alphanumeric code associated with a subsidy that may be offered to a customer. The subsidy identifier 902 may also be based on, or associated with, a subsidy identifier 602 stored in the subsidy provider database 600, a subsidy identifier 702 stored in the subsidy provider rules database 700, and/or a subsidy identifier 804 stored in the central subsidy database 800.

For each subsidy, the central subsidy rules database 900 also stores the evaluation criteria 904 which indicates one or more conditions that must be met in order for the subsidy to be offered to a customer. The total central quantity 906 and the currently available central quantity 908 may indicate, for example, a total number of subsidies that the central controller 300 will allow customers to accept and the number of subsidies that the central controller has not yet made available to customer devices 400.

Central Issued Subsidy Offer Database

Referring to FIG. 10, a table represents one embodiment of the central issued subsidy offer database 1000 that may be stored at the central controller 300 according to an embodiment of the present invention. The table includes entries identifying subsidy offers that have been sent to customer devices 400. The table also defines fields 1002, 1004, 1006, 1008 for each of the entries. The fields specify: a subsidy offer identifier 1002, a customer identifier 1004, a status 1006, and a redemption code 1008. The information in the central issued subsidy offer database 1000 may be created and updated, for example, based at least in part on information exchanged with one or more customer devices 400.

The subsidy offer identifier 1002 may be, for example, an alphanumeric code associated with a subsidy offer that has been sent to a customer device. The subsidy offer identifier 1002 may be based on, or associated with, a subsidy offer identifier 1102 stored in the customer subsidy offer database 1100 and/or a subsidy offer identifier 1202 stored in the customer subsidy offer rules database 1200.

For each subsidy offer that has been sent to a customer device 400, the central issued subsidy offer database 1000 also stores the customer identifier 1004 associated with the customer device 400. According to another embodiment of the present invention, a customer device identifier may be stored instead of, or in addition to, the customer identifier 1004.

The status 1006 may indicate, for example, if the subsidy offer is “open” (e.g., has not been output by the customer device 400), “redeemed” (e.g., has been output by the customer device 400, accepted and redeemed by the customer), “rejected,” or “revoked” (e.g., has been deleted from the customer device 400). The redemption code 1008 is also stored for each subsidy offer that has been sent to a customer device 400. The redemption code 1008 may, for example, be based on the format defined by the redemption code format 814 stored in the central subsidy database 800.

Customer Subsidy Offer Database

Referring to FIG. 11, a table represents one embodiment of the customer subsidy offer database 1100 that may be stored at the customer device 400 according to an embodiment of the present invention. The table includes entries identifying subsidy offers that have been received by the customer device 400. The table also defines fields 1102, 1104, 1106, 1108, 1110 for each of the entries. The fields specify: a subsidy offer identifier 1102, a description 1104, an expiration date 1106, a redemption code 1108, and a status 1110. The information in the customer subsidy offer database 1100 may be created and updated, for example, based at least in part on information received from the central controller 300 or one or more subsidy provider devices 200.

The subsidy offer identifier 1102 may be, for example, an alphanumeric code associated with a subsidy offer that has been received by the customer device 400. The subsidy offer identifier 1102 may be based on, or associated with, a subsidy offer identifier 1002 stored in the central issued subsidy offer database 1000 and/or a subsidy offer identifier 1202 stored in the customer subsidy offer rules database 1200. For example, the subsidy offer identifier 1002 may be included within the subsidy offer identifier 1102.

For each subsidy offer that has been received by the customer device 400, the customer subsidy offer database 1100 also stores a description 1104 of the subsidy. The description 1104 may comprise, for example, any text, image or audio information

associated with the subsidy. Each subsidy may also be associated with the expiration date 1106 (which may correspond to the expiration date 812), after which the subsidy is no longer available. Note that, if desired, an expiration time may be used in addition to, or in place of, the expiration date 1106.

5 For each subsidy offer that has been received by the customer device 400, the customer subsidy offer database 1100 also stores the associated redemption code 1108. The redemption code 1108 may be based on, for example, a redemption code 1008 received from the central controller 300. According to another embodiment, the redemption code 1108 may be generated by the customer device 400, in which case the
10 redemption code 1108 may be based on the format defined by the redemption code format 814. The redemption code may be, for example, any information that enables the customer to receive a benefit associated with a subsidy offer. The status 1110 may indicate, for example, if the subsidy offer is “open” (*e.g.*, has not been output by the customer device 400), “redeemed” (*e.g.*, has been output by the customer device 400,
15 accepted and redeemed by the customer), “rejected,” or “revoked” (*e.g.*, has been deleted from the customer device 400).

Thus, FIG. 11 depicts a database in which the data is organized according to a data structure according to an embodiment of the present invention. The data structure includes a subsidy offer description data object (*i.e.*, description 1104) representing a
20 description of a subsidy offer associated with: a subsidy offer expiration date data object (*i.e.*, expiration date 1106) representing a date after which the subsidy offer will not be provided to a customer; and a subsidy offer redemption code data object (*i.e.*, redemption code 1108). The data structure also includes a subsidy offer status data object (*i.e.*, status 1110), representing the status of the subsidy offer. According to one embodiment, the
25 subsidy offer status data object may simply comprise a flag (*e.g.*, “valid” or “invalid”) indicating whether the subsidy offer may be provided to a customer. According to other embodiments, the data structure may further include a subsidy task data object (representing a subsidy task to be performed by a customer) and/or a subsidy benefit data object (representing a subsidy benefit, such as a monetary amount, to be provided to a
30 customer).

Customer Subsidy Offer Rules Database

Referring to FIG. 12, a table represents one embodiment of the customer subsidy offer rules database 1200 that may be stored at the customer device 400 according to an embodiment of the present invention. The table includes entries identifying subsidy offers that have been received by the customer device 400. The table also defines fields 1202, 1204, 1206 for each of the entries. The fields specify: a subsidy offer identifier 1202, customer rule(s) 1204, and a customer quantity 1206. The information in the customer subsidy offer rules database 1200 may be created and updated, for example, based at least in part on information received from the subsidy provider device 200 and/or the central controller 300.

The subsidy offer identifier 1202 may be, for example, an alphanumeric code associated with a subsidy offer that has been received by the customer device 400. The subsidy offer identifier 1202 may be based on, or associated with, a subsidy offer identifier 1002 stored in the central issued subsidy offer database 1000 and/or a subsidy offer identifier 1102 stored in the customer subsidy offer database 1100.

For each subsidy offer that has been received by the customer device 400, the customer subsidy offer rules database 1200 also stores one or more customer rule(s) 1204 which indicate under what circumstances the subsidy offer should be output to the customer. For example, as illustrated by the second entry in FIG. 12, the subsidy offer associated with subsidy offer identifier “S1002-O211” should be output whenever the customer indicates an interest in purchasing an item having an item price less than \$100. Note that the customer rules 1204 may be a subset of the evaluation criteria 904 stored at the central controller 300. For example (as shown in FIG. 9), the evaluation criteria 904 associated with “S1002” indicates both that (i) the item price must be less than \$100 and (ii) the customer must reside in one of a number of specific ZIP codes. The central controller 300, however, may have already determined that a particular customer associated with a customer device 400 resides in one of those ZIP codes before any information associated with the subsidy offer was transmitted to that customer device 400. Therefore, the customer rules 1204 do not need to reflect this condition (*i.e.*, the customer associated with the customer device 400 automatically satisfies that portion of the evaluation criteria 904).

Note that the customer rule(s) 1204 may be associated with activities other than the purchase of an item. For example, the customer rule(s) 1204 may be associated with: a location of a customer or a customer device 400, such as a location determined by a Global Positioning System (GPS) device, a cellular telephone device or the proximity of the customer device 400 to a retail store transmitter; or a date, such as a customer birthday. According to another embodiment, there may be no customer rule(s) 1204 (*i.e.*, the subsidy offer may always be provided to a customer). Note that a customer may download hundreds of such subsidy offers into a PDA “wallet” (*i.e.*, a device that stores representations of value) and decide to accept various subsidy offers as he or she shops. According to another embodiment, subsidy offers may be pre-loaded onto a customer device 400.

The customer subsidy offer rules database 1200 also stores the customer quantity 1206 that reflects how many times the customer may accept the subsidy offer. Similarly, the customer subsidy offer rules database 1200 may store other information (not shown in FIG. 12), such as: the number of times a particular subsidy can be offered to (as opposed to being accepted by) a customer, which subsidy should be output to a customer when more than one subsidy is appropriate, or information that will enable the customer to perform a task associated with the subsidy (*e.g.*, an access code, a URL or a phone number).

Redeemed Subsidy Offer Database

Referring to FIG. 13, a table represents one embodiment of the redeemed subsidy offer database 1300 that may be stored at the merchant device 500 according to an embodiment of the present invention. The table includes entries identifying subsidy offers that have been redeemed by one or more customers. The table also defines fields 1302, 1304, 1306, 1308 for each of the entries. The fields specify: a redeemed subsidy offer identifier 1302, a customer identifier 1304, a redemption date 1306, and a subsidy offer redemption code 1308. The information in the redeemed subsidy offer database 1300 may be created and updated, for example, based on information received from a customer or a customer device 400 when a customer redeems a subsidy offer (*e.g.*, when the customer arranges to receive a benefit associated with a subsidy offer).

The redeemed subsidy offer identifier 1302 may be, for example, an alphanumeric code associated with a subsidy offer that has been redeemed by a customer. The redeemed

subsidy offer identifier 1302 may be based on, or associated with, the subsidy offer identifiers 1102, 1202 stored at the customer device 400.

For each subsidy offer that has been redeemed by a customer, the redeemed subsidy offer database 1300 also stores the customer identifier 1304 of the customer who redeemed the subsidy offer and the redemption date 1306 on which it was redeemed. Moreover, the subsidy offer redemption code 1308 (e.g., a code that was provided by the customer or the customer device 400 to verify that the customer was entitled to redeem the subsidy offer from a POS terminal or ATM device associated with the merchant) may also be stored in the redeemed subsidy offer database 1300.

Methods that may be used in connection with the transaction system(s) 100, 150 according to an embodiment of the present invention will now be described in detail with respect to FIGS. 14 through 20. In particular, FIGS. 14 through 16 illustrate some general embodiments, while FIGS. 17 through 20 illustrate more detailed embodiments according to the present invention.

Transaction System Methods

FIG. 14 is a flow chart illustrating method 1400 which may be performed by a subsidy provider device 200 or central controller 300 according to an embodiment of the present invention. The flow chart depicted in FIG. 14, as well as the other flow charts discussed herein, is not intended to imply a fixed order to the elements shown therein, and embodiments of the present invention can be practiced in any order that is practicable.

At 1402, a subsidy offer to be provided to a customer is determined. The subsidy offer is associated with a benefit from a subsidy provider. At 1404, information associated with the subsidy offer is transmitted to be stored on a customer device 400.

For example, when the method 1400 is performed by a subsidy provider device 200, the subsidy offer may be “determined” at 1402 by retrieving information from the subsidy provider database 600 and the subsidy provider rules database 700. By way of example only, the subsidy provider device 200 may determine which subsidy has the highest currently available provider quantity 708. Information associated with the determined subsidy may then be transmitted “to be stored on a customer device” at 1404 by transmitting the information to the central controller 300, which in turn transmits the information to one or more customer devices 400. According to another embodiment, the subsidy provider device 200 itself transmits the information directly to one or more

customer devices 400. Note that the customer may request and initiate a download of particular subsidy offers, or may simply request to receive subsidy offers and allow the system 100 to select the particular subsidy offer(s).

When the method 1400 is performed by the central controller 300, the subsidy offer may be “determined” at 1402 by receiving information from the subsidy provider device 200. According to another embodiment, the subsidy offer is determined by retrieving information from the central subsidy database 800 and the central subsidy rules database 900. By way of example only, the central controller 300 may determine a subsidy offer based on information associated with a customer (*e.g.*, demographic information). At 1404, the central controller 300 may then transmit the information directly to one or more customer devices 400.

FIG. 15 is a flow chart illustrating a customer device 400 method 1500 according to an embodiment of the present invention. At 1502, information associated with a subsidy offer is received (*e.g.*, from the central controller 300 or a subsidy provider device 200). The received information may be stored, for example, in the customer subsidy offer database 1100 and the customer subsidy offer rules database 1200.

At 1504, an indication that a customer is interested in purchasing an item is received. For example, the customer device 400 may receive an item price request generated by the customer. At 1506, the customer device outputs the subsidy offer to the customer (*e.g.*, displays the description 1104 associated with the subsidy offer) in response to the indication.

Note that an indication of a product purchase is only one example of when a subsidy offer may be output to a customer. As described herein, there are other circumstances under which the subsidy offer is output to a customer.

By way of example, consider the customer PDA 460 illustrated in FIG. 21. In this case, all subsidy offers are provided to the customer, and the customer may select the subsidy offer he or she wishes to evaluate and/or accept. For example, the customer PDA 460 may list a plurality of subsidy offers 470 which may be selected by the customer. Upon selection of a subsidy offer, the customer PDA 460 outputs details of that subsidy offer (*e.g.*, the dollar amount of a benefit, the party offering the benefit, and a task to be performed by the customer). The customer may accept or reject the subsidy offer by, for example, manipulating hardware or software controls 480 of the customer PDA 460. In such an embodiment, each subsidy provider may, in effect, be displaying an advertisement

to the customer in the form of a subsidy offer (*i.e.*, the subsidy provider may benefit even when the customer does not accept the subsidy offer).

In one embodiment, the plurality of subsidy offers may be listed such that only the subsidy amount is initially displayed (*i.e.*, the name of the subsidy provider may not be displayed to a customer). Thus, the customer may see only a list of monetary amounts from which to choose. In such an embodiment, if the customer desires a particular amount of money to be applied to his or her purchase, he or she can select one or more subsidy offers based solely on the subsidy amounts. Such an embodiment may be advantageous for customers who do not want to see extraneous information regarding offers (*e.g.*, when the customer is primarily concerned with only the amount of “free” money he or she desires to receive). Moreover, some subsidy providers may wish to remain anonymous at this point (*e.g.*, a subsidy provider who is not well-known to customers).

In another embodiment, a subsidy offer may be listed such that the subsidy amount is not displayed to the customer. For example, the subsidy offer information displayed on the customer PDA 460 may indicate only that an item may be received for free, or that a peripheral item will be provided for free, without disclosing the value of the item.

Referring now to FIG. 16, a flow chart illustrating a merchant device 500 method 1600 according to an embodiment of the present invention is shown. At 1602, the merchant device 500 receives a redemption code associated with a subsidy offer. For example, the merchant device 500 may receive the redemption code from the customer or from a customer device 400 associated with the customer. If at 1604 it is determined that the received redemption code is not valid, the method ends at 1606.

If at 1604 it is determined that the received redemption code is valid, the merchant device 500 arranges for the customer to receive the benefit at 1608. For example, when the merchant device 500 is a POS terminal, the benefit may comprise a subsidy amount that is applied to an original purchase price associated with an item thereby reducing the price the customer pays for the item. When the merchant device is a ATM device, the benefit may comprise a cash payment that is provided to the customer.

FIG. 17 is a flow chart illustrating a method 1700 which may be performed by a subsidy provider device 200 according to an embodiment of the present invention. At 1702, a subsidy offer to be provided to a customer is determined, the subsidy offer being associated with a benefit from a subsidy provider. According to one embodiment of the present invention, the benefit is a subsidy amount to be applied to an original price. For

example, the benefit may be that the customer receives \$50 off of an original price associated with a television.

According to another embodiment of the present invention, the benefit may include the payment of subsidy amount at an ATM device or the payment of a subsidy amount to a credit card account. Other benefits may include one or more substitute items to be provided to the customer in place of the original item (*e.g.*, a higher quality item) or one or more supplemental items to be provided to the customer in addition to the original item (*e.g.*, an item peripheral, a warranty). Moreover, the benefit may include any improved term associated with a transaction, such as an extended warranty term or a reduced interest rate term.

According to an embodiment of the present invention, the subsidy offer may also be associated with a task to be performed by the customer. For example, the customer may receive the benefit associated with the subsidy offer only if the customer applies for, or subscribes to, a service. Examples of such services include: telephone, Internet, banking, credit card account, insurance, securities trading, satellite television or cable television services. Other tasks may include, for example, purchasing another item (*e.g.*, an item from another merchant), accessing a Web page, visiting a merchant, dialing a telephone number, answering a question, etc.

At 1704, the subsidy provider device 200 transmits a description of the subsidy offer to the central controller 300. For example, the subsidy provider device 200 may transmit text, graphics and audio files to the central controller 300 describing the subsidy offer.

At 1706, the subsidy provider device 200 transmits a customer subsidy offer rule to the central controller 300. The customer subsidy offer rule may be, for example, one or more conditions that must be satisfied in order for a subsidy offer to be output to a customer. For example, the customer subsidy offer rule may indicate that the subsidy offer should be output to a customer when the customer indicates an interest in purchasing a particular brand of coffee at a particular supermarket. The customer subsidy offer rule may also be, for example, based on a particular item, an item category, an original item price, a merchant, or the performance of a task by the customer. According to another embodiment, the customer subsidy offer rule is based on a signal from a GPS device that determines a geographic location. For example, one or more subsidy offers may be output when the customer is within a particular area (*e.g.*, in a particular store or within a predetermined distance of any of a plurality of stores).

At 1708, the subsidy provider device 200 transmits other evaluation criteria to the central controller 300 and/or the customer device 400. The other evaluation criteria may be, for example, one or more conditions that must be satisfied in order for a customer to receive a subsidy offer. For example, the other evaluation criteria may indicate that only female customers over age 55 may receive the subsidy offer. In this case, a male customer would not receive a subsidy offer even if he satisfies the customer subsidy offer rule (*e.g.*, even if he indicates an interest in purchasing a particular brand of coffee at a particular supermarket).

At 1710, the subsidy provider device 200 transmits other information associated with the subsidy offer to the central controller 300 and/or the customer device 400. Examples of such other information include: an expiration date after which the subsidy should not be offered to a customer, an indication of a task that must be completed by the customer if he or she accepts the subsidy offer, an access code that enables a customer to perform the task, and a total number of subsidies that should be offered to customers.

The other information may also include a redemption code (*e.g.*, a code that is provided when a customer accepts a subsidy offer or performs a task) or a redemption code format. The redemption code may be, for example, a “hash” value generated when transaction parameters are used in a hash function, such as a one-way hash function. A hash function is a transformation that takes input information and returns a (generally smaller) hash value. A hash function is said to be “one-way” if it is hard to invert (*i.e.*, it is hard to determine the input information based on the hash value). In general, one can think of a hash value as a “digital fingerprint” of the input information. For example, the input information to the hash function may be the customer’s name and address and information about a transaction (*e.g.*, a subsidy offer identifier and item identifier). In this case, the hash function would generate the redemption code (*i.e.*, the hash value) based on that input information. Applicable hash functions and other encryption techniques are described in Bruce Schneier, “Applied Cryptography: Protocols, Algorithms, and Source Code in C” (John Wiley & Sons, Inc., 2nd Ed. 1996).

According to an embodiment of the present invention, at 1712 the subsidy provider device 200 receives an indication that the customer has accepted and redeemed the subsidy offer. The indication may be received from, for example, the central controller 300, a customer device 400 or a merchant device 500. At 1714, the subsidy provider device 200 performs any settlement process that may be necessary as a result of the subsidy offer. For example, if the subsidy offer allowed a customer to receive a free television, the subsidy

provider may provide a payment to the merchant that provided the television to the customer. According to another embodiment of the present invention, the subsidy provider may instead provide payment to the central controller or to the customer. Note that the subsidy provider may provide payments to more than one party. For example, the
5 subsidy provider may provide (i) a payment to the merchant that gave the television to the customer and (ii) a separate fee to the central controller in exchange for facilitating the transaction.

FIG. 18 is a flow chart illustrating a method 1800 which may be performed by a central controller 300 according to an embodiment of the present invention. At 1802, the
10 central controller 300 receives a subsidy offer description from the subsidy provider device 200. At 1804, the central controller 300 receives from the subsidy provider device 200 a customer subsidy offer rule and other evaluation criteria associated with the subsidy offer. At 1806, the central controller 300 receives from the subsidy provider device 200 other information associated with the subsidy offer (*e.g.*, expiration dates and redemption code formats associated with subsidy offers). The information received from the subsidy
15 provider device 200 is described in more detail above with respect to FIG. 17.

At 1808, the central controller 300 determines one or more subsidy offers to be provided to a customer. For example, the central controller 300 may select subsidy offers based on the other evaluation criteria and information associated with the customer. For
20 example, the central controller 300 may decide that a particular customer device 400 should receive a particular subsidy offer based on: an address associated with the customer, demographic information associated with the customer, psychographic information associated with the customer (*e.g.*, information about attitudes, values, lifestyles and opinions), and/or a credit rating associated with the customer.

The information associated with the customer may also be based on an association
25 of the customer with the subsidy provider or with a third party. For example, a subsidy from a first Internet Service Provider (ISP) may only be offered to a customer who currently subscribes to a service provided by a second (different) ISP. The information associated with the customer may also be based on information associated with at least
30 one previous transaction (*e.g.*, subsidy offers the customer received, accepted or rejected in the past). The information may also comprise information associated with another item purchased by the customer (*e.g.*, that the customer has purchased a new computer within the last three months) or information received from the customer (*e.g.*, a response to a survey).

In addition to determining if a particular subsidy offer will be provided to a customer, the central controller 300 may also determine an amount associated with the benefit (*e.g.*, a subsidy amount to be applied to an original purchase price associated with an item).

5 At 1810, the central controller 300 transmits the subsidy offer description, the customer subsidy offer rule and other information to the customer device 400. Note that the central controller 300 may transmit the information associated with the subsidy offer to the customer device 400 before the customer has indicated an interest in purchasing an item (*e.g.*, the customer device 400 may store the information until the customer indicates
10 an interest in purchasing an item). According to another embodiment of the present invention, the central controller 300 may respond to an indication from a customer that he or she is interested in purchasing an item by transmitting the information associated with the subsidy offer to the customer device 400. Note also that the central controller 300 may determine whether or not a plurality of subsidy offers will be provided to a plurality of
15 customers.

 At 1812, the central controller 300 receives an indication that the customer has accepted and redeemed the subsidy offer. This indication may be received from, for example, a customer device 400 or a merchant device 500. For example, the central controller 300 may communicate with the customer device 400 on a periodic or non-
20 periodic basis to review the subsidy offers that are stored at the customer device (*e.g.*, reviewing, updating, adding and deleting subsidy offers). At this time, the central controller 300 may receive status information from the customer device 400 indicating which subsidy offers have been output to the customer and which subsidy offers have been accepted or rejected by the customer.

25 Note that the central controller 300 may also generate specific redemption codes (*e.g.*, codes based on the redemption code format received from the subsidy provider device 200) to be provided to the customer device. The central controller 300 may also arrange for the customer to receive the benefit associated with the subsidy offer or arrange for the customer to provide payment of a penalty amount if he or she fails to perform a
30 task (*e.g.*, fails to subscribe to the subsidy provider's service for an amount of time indicated by the offer). Some systems and methods for applying a penalty if a customer fails to perform a task are disclosed in U.S. Patent Application Serial No. 09/322,351 entitled "Method and Apparatus for Providing Cross-Benefits and Penalties."

At 1814, the central controller 300 performs any settlement process that may be necessary as a result of the subsidy offer. For example, the central controller 300 may exchange payments between the subsidy provider, the customer or the merchant from which the customer purchases an item.

5 FIG. 19 is a flow chart illustrating a method 1900 that may be performed by a customer device 400 according to an embodiment of the present invention. At 1902, the customer device 400 receives from the central controller 300 the subsidy offer description, the customer subsidy offer rule and/or other information associated with the subsidy offer (e.g., an expiration date and a subsidy offer quantity). According to an embodiment of the
10 present invention, the customer device 400 stores this information and outputs the subsidy offer to the customer as will now be described.

At 1904, the customer device 400 receives an indication that a customer is interested in purchasing an item from a merchant. The indication may be, for example, a request for an item price. For example, a customer shopping in a store may use his or her
15 PDA (e.g., customer device 400) to generate an item price request. According to other embodiments, the indication may be a request to purchase the item or an indication that the customer is accessing information about the item (e.g., is viewing information about the item via his or her PDA).

Other indications that the customer is interested in purchasing the item may be, for
20 example: information stored at the customer device 400, an indication from an input device associated with the customer (e.g., that the customer has scanned a bar code printed on an item), an indication that the customer is viewing information about the item, an indication that the customer has viewed information about the item for a predetermined period of time, an indication that the customer is providing payment for the item (e.g., a
25 credit card number), an indication that the item is in a shopping cart (including a conventional or virtual shopping cart), a search term, an indication that the customer is purchasing the item from another merchant, a bid for the item (e.g., in an auction for the item), an offer to purchase the item (e.g., an offer including a customer defined transaction term), and an indication that a second customer is interested in purchasing the item (e.g.,
30 another customer has submitted a higher bid for the item).

The indication may also reflect that the customer is not interested in purchasing the item at this time. For example, the indication may reflect that the customer is no longer interested in purchasing the item (e.g., has removed the item from his or her virtual shopping cart), that the customer is not going to purchase the item at an original price, or

that the customer is interested in purchasing another item (*e.g.*, a similar item made by another manufacturer). Note that, as described herein, circumstances besides the intended purchase of an item may result in a subsidy offer being provided to a customer.

If the received indication is not in accordance with the customer subsidy offer rule(s) at 1906, the process ends at 1908.

If the received indication is in accordance with the customer subsidy offer rule(s) at 1906, the subsidy offer is output to the customer. For example, the customer device 400 may display the subsidy offer description to the customer. Note that the customer device 400 may determine that the customer qualifies to receive more than one subsidy offer. In this case, the customer device 400 may select one of the subsidy offers, or may allow the customer to select one or more of the subsidy offers. If the customer does not accept any of the subsidy offers at 1912, the process ends at 1908.

If the customer accepts one or more of the subsidy offers at 1912, the customer device 400 may output a redemption code at 1914 (*e.g.*, to the customer). According to another embodiment of the present invention, the customer device 400 outputs the redemption code directly to the merchant device 500 (*e.g.*, directly to a POS terminal or an ATM device).

Note that, according to an embodiment of the present invention, the customer device 400 may only output the redemption code after the customer has performed a task associated with the subsidy offer. For example, the customer may accept a subsidy offer to “receive this magazine for free if you answer our simple survey now.” Only after the customer completes the survey using his or her customer device 400 is the redemption code output to a POS terminal (*e.g.*, from the customer device 400 via an IR port), which allows the customer to receive the magazine for free.

By way of another example, a customer may accept a subsidy offer to “receive \$20 from any ATM device if you purchase this television today.” In this case, the customer device 400 may determine that the customer has in fact purchased the television (*e.g.*, by communicating with the central controller 300 or the merchant device 500 and receiving a code or command therefrom) before displaying, *e.g.*, a sixteen-digit redemption code to the customer. In this case, the customer may enter the redemption code using an ATM device keypad to receive payment of the \$20.

FIG. 20 is a flow chart illustrating method 2000 that may be performed by a merchant device 500 according to an embodiment of the present invention. At 2002, the merchant device 500 receives a redemption code associated with a subsidy offer. The

merchant device 500 may receive the redemption code from, for example, the subsidy provider device 200, the central controller 300, the customer device 400 or from the customer.

If the redemption code is not valid at 2004, the process ends at 2006. The validity of the redemption code may be determined, for example, by analyzing a hash value, comparing the redemption code to a list of valid redemption codes, or by sending the redemption code to another party (*i.e.*, a subsidy provider) for validation. If the redemption code is valid at 2004, the original price of an item being purchased by the customer is reduced by the subsidy amount at 2008.

At 2010, the merchant device 500 performs any settlement process that may be necessary as a result of the subsidy offer. For example, the merchant may exchange payments with the subsidy provider or the central controller as part of the settlement process.

Additional Embodiments

The following are several examples which illustrate various embodiments of the present invention. These examples do not constitute a definition of all possible embodiments, and those skilled in the art will understand that the present invention is applicable to many other embodiments. Further, although the following examples are briefly described for clarity, those skilled in the art will understand how to make any changes, if necessary, to the above-described apparatus and methods to accommodate these and other embodiments and applications.

By way of example, suppose that DELTA® airlines wishes to attract younger customers. DELTA® communicates to a central controller that it will pay for the purchase of any travel-related product (*e.g.*, a book related to travel) having an item price of less than \$50 in exchange for a promise from a customer under 30 years old to purchase a DELTA® airline ticket within the next twelve months. The central controller sends information about this subsidy to a number of PDAs associated with customers who are under 30 years old.

One of the customers who received the information (*i.e.*, who was under 30 years old) shops at a bookstore and uses her PDA to express an interest in book about a foreign country. The PDA then displays to the customer a subsidy offer to “receive this \$45 book free if you agree to purchase an airline ticket from DELTA® within the next twelve

months.” The customer accepts the subsidy offer, and the PDA communicates a redemption code to a POS terminal at the bookstore. The bookstore allows the customer to take the book without payment. The central controller then receives the redemption code (*e.g.* from the bookstore or the customer’s PDA) and arranges for DELTA® to provide a payment of \$45 to the bookstore.

According to one embodiment of the present invention, the bookstore may instead charge the customer \$45 in exchange for the book. In this case, DELTA® may provide \$45 directly to the customer (*e.g.*, via a credit card or an ATM device) and \$5 to the central controller in exchange for facilitating the transaction. Note that DELTA® may instead have promised to pay the central controller \$50 for each transaction. In this case, the central controller would provide \$45 to the bookstore and keep the remaining \$5.

Note that a subsidy provider may instead provide multiple payments to the customer. For example, if the customer was to receive the book in exchange for using a particular Internet service for three months, the Internet service (*i.e.*, the subsidy provider) may provide \$15 to the customer each month (for a total of \$45).

According to another embodiment, the benefit offered to the customer may actually exceed the original price of the item being purchased. For example, a subsidy provider may offer to apply \$100 towards the customer’s purchase of the \$45 book if the customer applies for a new credit card. In this case, the customer may receive payment of the extra \$55 or may select additional books to receive for free or at a discount (as part of this transaction or in a future transaction with the merchant). The customer may also be allowed to select items from other merchants.

According to one embodiment, the subsidy offer is provided to the customer at a POS terminal. For example, a customer at a grocery store may be informed that he is eligible for \$100 subsidy if he agrees to transfer a credit card balance to a particular credit card within two weeks. If the customer is not purchasing \$100 worth of groceries during this transaction, the balance may be automatically applied to his next transaction. Similarly, a kiosk may be located in the grocery store and the customer can visit the kiosk to receive information about available subsidy offers. That is, the POS terminal or kiosk, together with information provided by the customer (*e.g.*, a password, frequent shopper number or information stored in a smart card) acts as the customer device 400.

According to another embodiment, a subsidy offer may be associated with a plurality of different subsidy providers and may require that the customer perform a plurality of tasks. For example, a customer may receive a subsidy offer to “receive this

television for free if you: (i) subscribe to a particular cable television service for one year, (ii) apply for a new credit card and (iii) have your monthly cable television fee directly billed to your new credit card.” In this case, either or both a cable television service provider and a credit card issuer may contribute towards the benefit being received by the customer (*i.e.*, the free television).

According to another embodiment, a customer may be a member of a “subsidy group.” The information associated with the group can then be used to determine the subsidy offers and benefits for the members. For example, a customer may indicate that he has been referred to a merchant by a third party (*e.g.*, by providing an identifier associated with the third party). This information may be used to determine the benefits that will be offered to the customer or to the third party.

The present invention has been described in terms of several embodiments solely for the purpose of illustration. Persons skilled in the art will recognize from this description that the invention is not limited to the embodiments described, but may be practiced with modifications and alterations limited only by the spirit and scope of the appended claims.